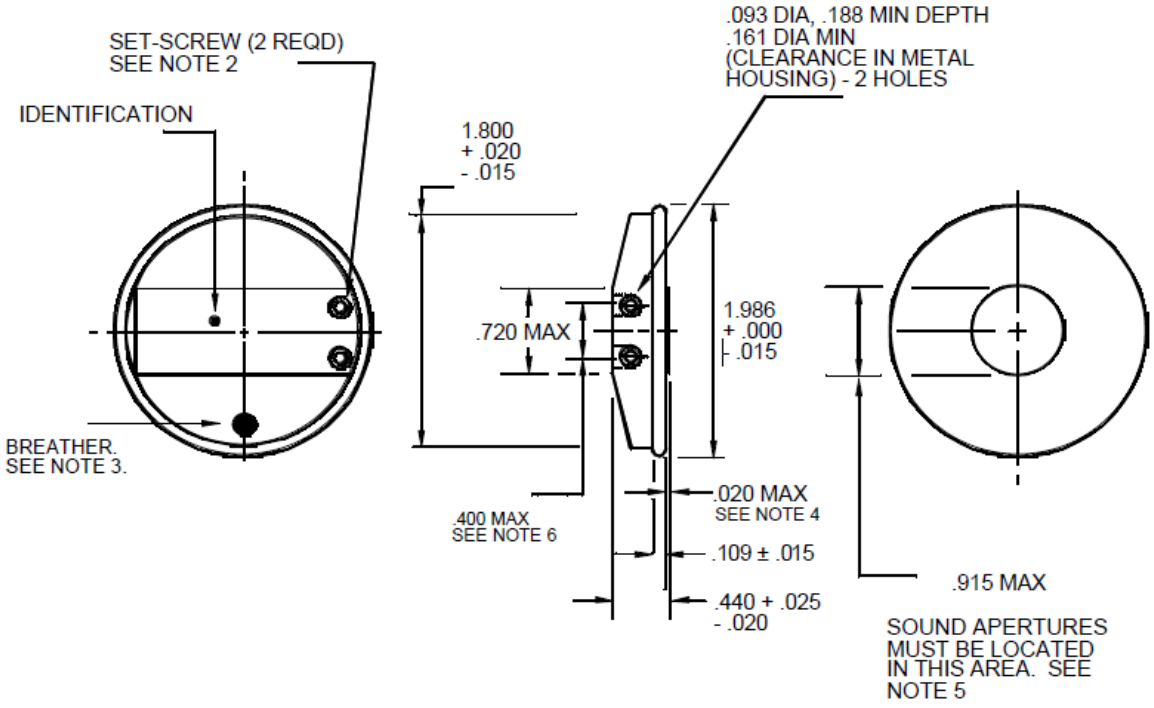
INCH-POUND
MIL-PRF-25670/2D
12 September 2014
SUPERSEDING
MIL-PRF-25670/2C
30 May 1997

PERFORMANCE SPECIFICATION SHEET

EARPHONE ELEMENT, HIGH AND LOW-ALTITUDE, H-143/AIC AND LOW-ALTITUDE, WATER-IMMERSIBLE, H-143A/AIC

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-PRF-25670.



NOTES:

1. Dimensions are in inches. Unless otherwise specified, tolerance is ± 0.010 inch.
2. Screws shall be recessed, of type slotted or Allen (for interchangeability of spares), and shall securely hold the next-higher-assembly headset-connector pins, preventing inadvertent disconnection.
3. Use of, quantity, and location of breather hole(s) are optional. See Requirements.
4. The raised central portion of the front cover is optional only in the H-143A/AIC.
5. All other dimensions shall ensure a firm positioning of the element in standard earcup foam filler material (depth, contour, and ear-position), as well as within the standard earcup retaining-ring.
6. Cable-connection holes shall be positioned within reach of standard-length headset cabling.

FIGURE 1. Earphone elements, H-143AIC, and H-143A/AIC.

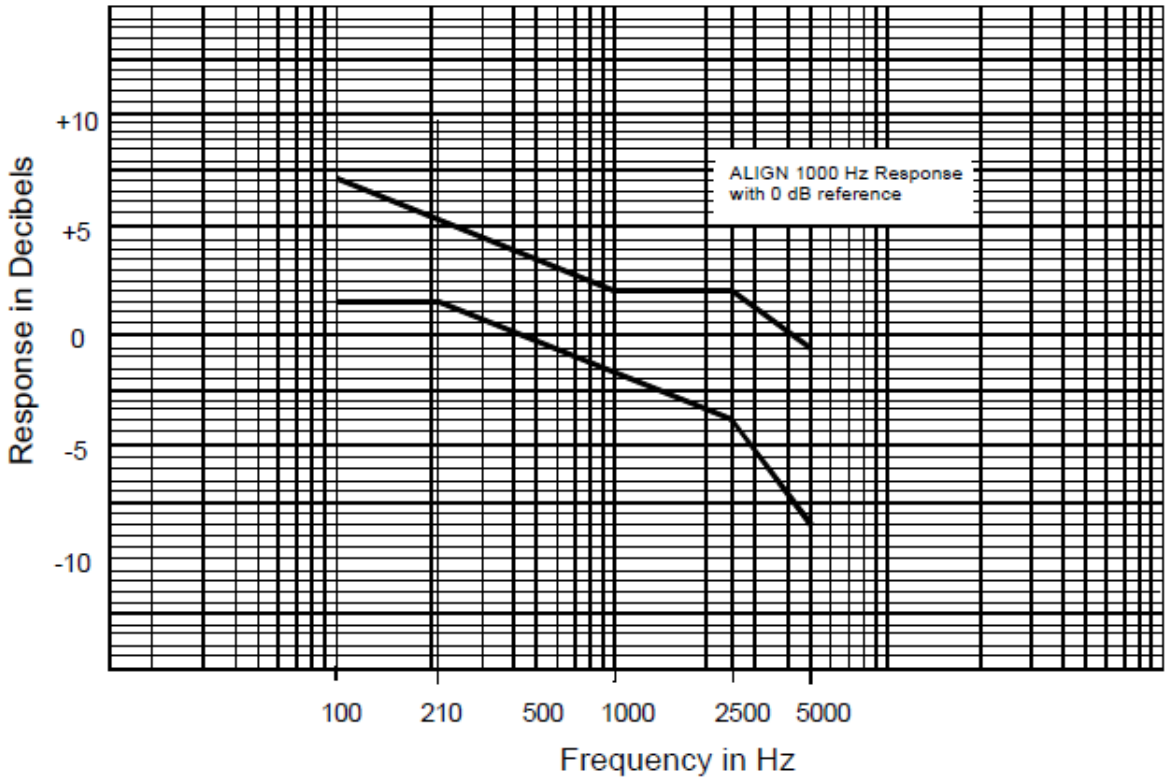


FIGURE 2. GROUND LEVEL FREQUENCY RESPONSE KEY BREAK POINTS DIGITIZED.					
FREQUENCY POINTS	100 Hz	210 Hz	1,000 Hz	2,500 Hz	5,000 Hz
UPPER LIMIT dB	+7.00	+5.39	+2.00	+2.00	-0.50
LOWER LIMIT dB	+1.50	+1.50	-1.97	-4.00	-8.50

FIGURE 2. Ground level frequency response envelope for earphone element H-143/AIC.

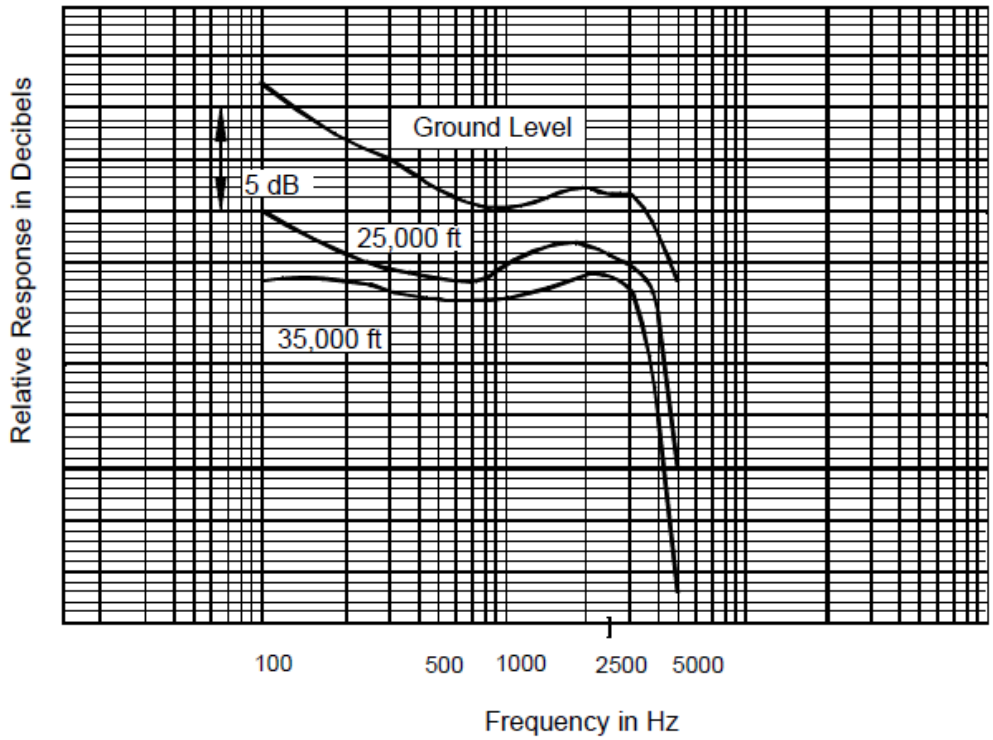


FIGURE 3. Typical pressure frequency characteristics for earphone element H-143/AIC.

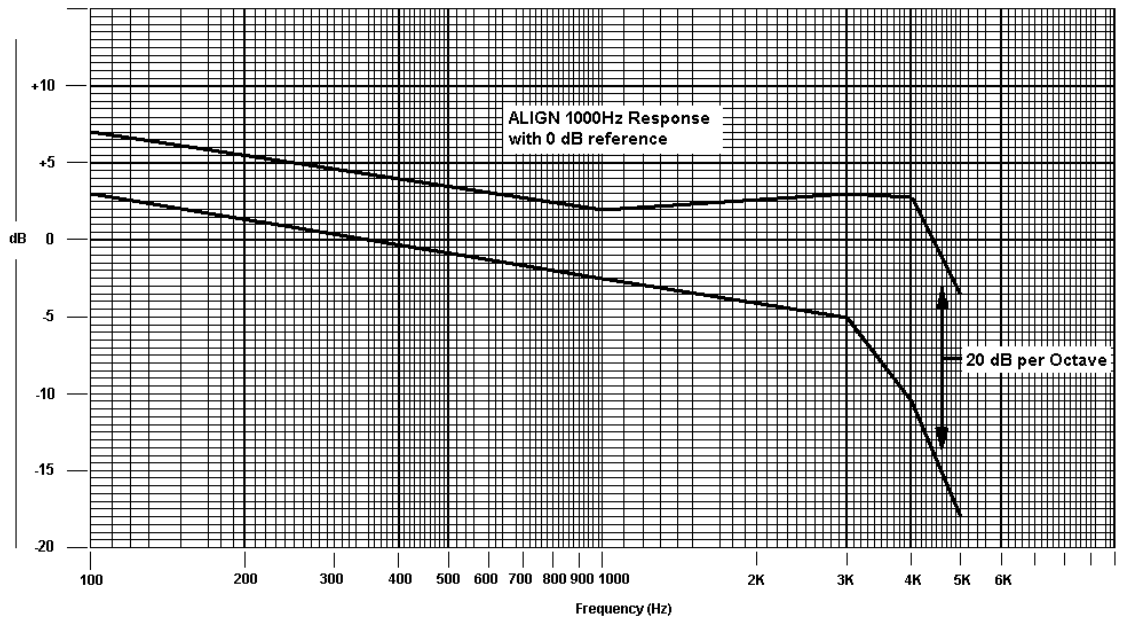


FIGURE 4. 25,000 FT FREQUENCY RESPONSE KEY BREAK POINTS DIGITIZED.					
FREQUENCY POINTS	100 Hz	1,000 Hz	3,000 Hz	4,000 Hz	5,000 Hz
UPPER LIMIT dB	+7.0	+2.0	+3.0	+2.75	-3.50
LOWER LIMIT dB	+3.0	-2.50	-5.0	-10.50	-18.00

FIGURE 4. 25,000 ft. frequency response envelope for earphone H-143/AIC.

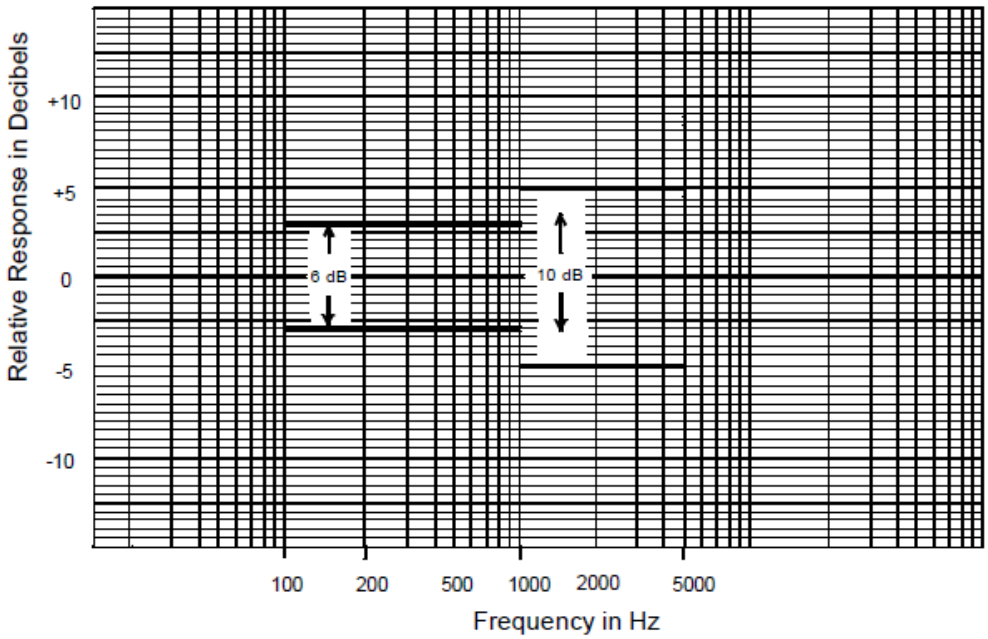


FIGURE 5. GROUND LEVEL FREQUENCY RESPONSE KEY BREAK POINTS DIGITIZED.					
FREQUENCY POINTS	100 Hz	500 Hz	1,000 Hz	4,000 Hz	5,000 Hz
UPPER LIMIT dB	+3.0	+3.0	+5.0	+5.0	+5.0
LOWER LIMIT dB	+3.0	+3.0	-5.0	-5.0	-5.0

FIGURE 5. Ground level frequency response for earphone element, Immersible, H-143A/AIC.

REQUIREMENTS:

Dimensions and configuration:	See figure 1.
Weight:	1.25 ounces, maximum.
Color:	The back case shall be dull black, or an equivalent low contrast, dark color, while the front cover shall be either clear, anodized aluminum, or black, in order to indicate the versatility of the parts' use in both ground-level and altitude applications.
Breather:	If the earphone element includes a breather hole in the back case, either as a hydroscopic breather, or a pressure equalization port, it shall be no more than 0.125 inch in diameter.
Stray magnetic field:	Five (5) degrees deflection maximum at a distance of 12 (twelve) inches.
Frequency response Range:	100 to 5,000 Hz.
Frequency response of actual unit under test:	
H-143/AIC:	
At ground level:	Within the limits specified on figure 2, the response within 1,000 to 5,000 Hz shall not change by more than ± 3 dB on any 500 Hz limit.
At altitude:	Within the characteristics on figure 3 and the response envelope on figure 4.
H-143A/AIC:	
At ground level:	Within the limits specified on figure 5.
At altitude:	Within ± 5 dB of the ground level response at an altitude of 15,000 feet, up to 3,500 Hz.
Sensitivity:	
H-143/AIC	105 ± 3 dB at 1 kHz at ground level; 100 dB minimum at 1 kHz at an altitude of 25,000 feet.
H-143A/AIC	102 dB minimum at 1 kHz at ground level.
Impedance:	
At 1,000 Hz	19 ± 2 Ω.
Between 100 to 3,000 Hz	Shall not exceed 22 Ω.
Harmonic distortion:	
Between 100 to 2,000 Hz	3% maximum.
Between 2,000 to 5,000 Hz	5% maximum.
Speech intelligibility:	In accordance with MIL-PRF-25670.
Immersion (H-143A/AIC):	The earphone element shall be constructed in a watertight manner, such that there is neither penetration (seepage) of water into the interior of the part, nor any other degradation in performance after being subjected to the testing in accordance with MIL-STD-810, method 512.5, "Immersion", procedure I.
Marking (H-143A/AIC only):	Marking shall be in accordance with MIL-PRF-25670, with the addition that the part shall have the term "IMMERSIBLE" displayed on the back cover (location optional), in order to better distinguish the H-143A/AIC from the identical H-143/AIC.

Intended use: Earphone elements H-143/AIC and H-143A/AIC are low-impedance, light-weight transducers used in noise-attenuating communication headsets. The H-143/AIC is a replaceable component of the headset-microphones used by high-altitude aircrew (flight) and ground-crew personnel, described in documents such as MIL-PRF-87819, MIL-DTL-83511, and MIL-DTL-83425. The H-143A/AIC is a water-proof version of the H-143/AIC. It is used by the US Army as a component of the headset-microphone kit MK-896A/AIC, which is itself a component of the flying helmet SPH-4.

TABLE I. Part or Identifying Number (PIN) designations.

PIN	Characteristics
H-143/AIC	High- and low-altitude earphone element
H-143A/AIC	Low-altitude, water-immersible, earphone element

Changes from previous issue. The margins of this specification sheet are marked with vertical lines to indicate where changes from the previous issue were made. This was done as a convenience only and the government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

Referenced documents. In addition to MIL-PRF-25670, this document references the following:

MIL-DTL-83425
MIL-DTL-83511
MIL-PRF-87819
MIL-STD-810

CONCLUDING MATERIAL

Custodians:
Army – CR
Air Force – 85
DLA – CC

Preparing activity:
DLA – CC

(Project 5965-2013-010)

Review activity:
Air Force – 99

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at https://assist.dla.mil.